August 7, 1956

Dr. E. Kellenberger
Laboratoire de Biophysique
Universite de Geneva
Switzerland

Dear Dr. Kellenberger:

Thank you for your letter of July 14.

The Lp^r types mentioned in the paper have been and are being studied further. The immune phenotype is associated with the heterogenotic state, and according to our present working hypothesis corresponds to a genotype in which the Lp^s factor is carried both in the fragment and in the chromosome. Alternatively, lysogenic heterogenotes are believed to carry Lp^+ in both sites. A number of additional experiments are needed, and some are under way, to test this hypothesis. The main evidence for it is that all haploid (non-heterogenotic) segregants from the immune clones are sensitive; conversely, all of the heterogenotic derivatives from the same clones remain immune.

The occurrence of these immune types is fairly typical of transductions to sensitive recipients, when these can be carried out at low multiplicity (i.e., with "HFT" lysates). Dr. Morse has been unable to find any evidence of production of lambda from these immunes, in distinction to our and others' experience with other "defective prophages". If you would be interested in an electron-microscopic study of this situation, we will be obliged to hear of your results. Under separate cover, Mrs. Lederberg is sending W-518 which will serve as well as any other culture for the demonstration, as requested in your letter.

We thank you for sending us reprints of your studies, and hope the exchange will be continued.

Yours sincerely,

Joshua Lederberg
Professor of Genetics